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(71) Applicant(s):
David William Nathaniel Sharp
50 Sneath Avenue, Golders Green,
LONDON, NW11 9AH, United Kingdom

(72) Inventor(s):
David William Nathaniel Sharp

(74) Agent and/or Address for Service:
David William Nathaniel Sharp
50 Sneath Avenue, Golders Green,
LONDON, NW11 9AH, United Kingdom

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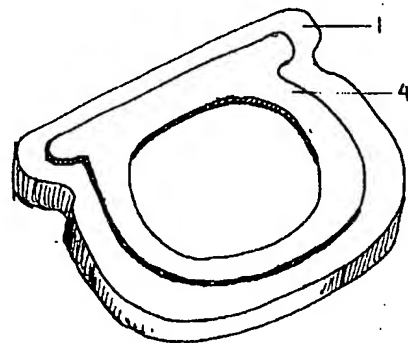
(56) Documents Cited:
GB 1584521 A US 6416329 B1

(58) Field of Search:
INT CL⁷ A63H
Other: Online: EPODOC, PAJ, WPI.

(54) Abstract Title: Magnetic letters for use with magnetophoretic display toys.

(57) Stamps 1 with an alphanumeric character formed on/as a front face and magnetic material 4 applied to the rear face are provided so that when the tile is pressed on a magnetophoretic display toy (Fig. 3) an image of the character appears on the display toy. The stamps may be formed from wooden jigsaw letters with magnetic material applied to one surface, or they be formed from plastic letters designed as fridge magnets in which case magnetic material is added to cover the whole of one side of the letter.

FIG 2.



GB 2 390 823 A

FIG 1.

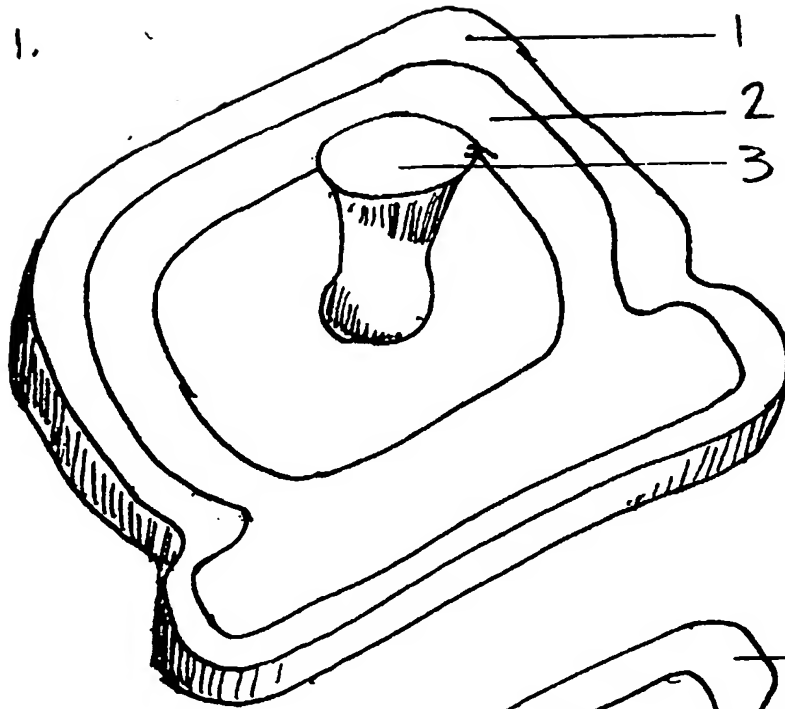
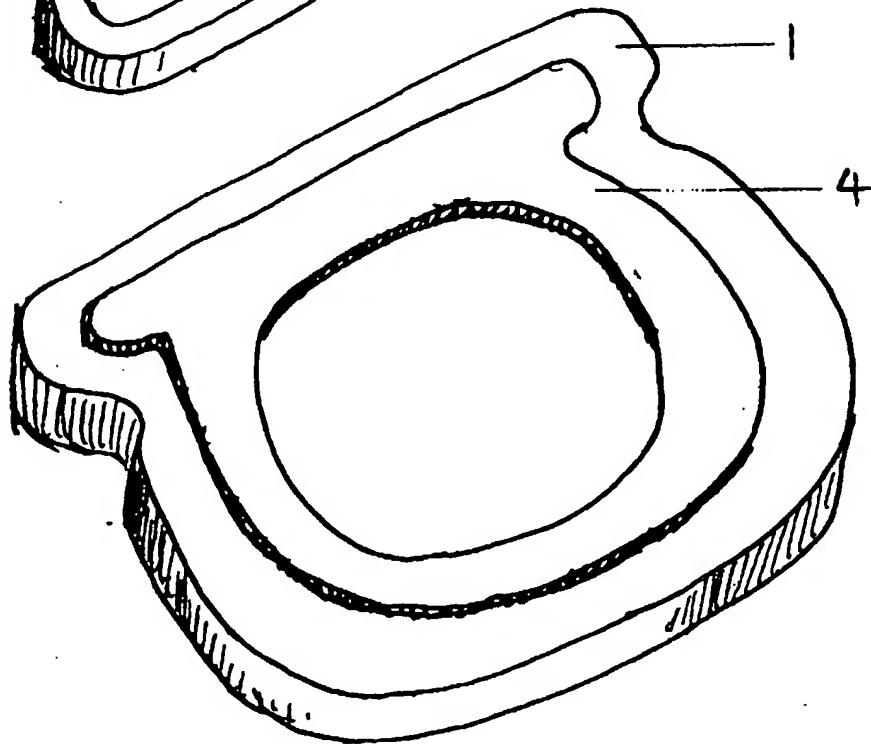


FIG 2.



2/3

FIG 3.

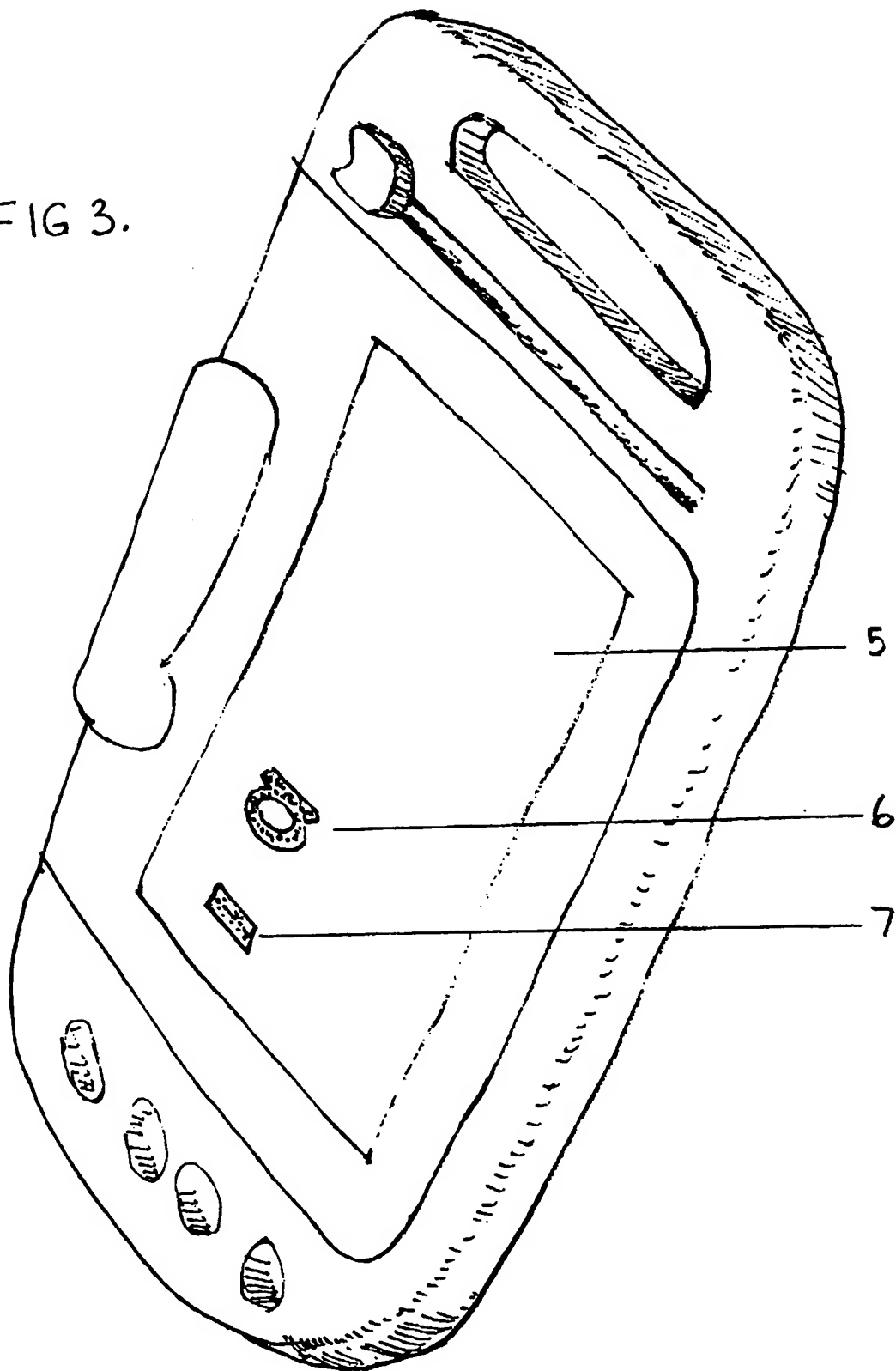


FIG. 4.

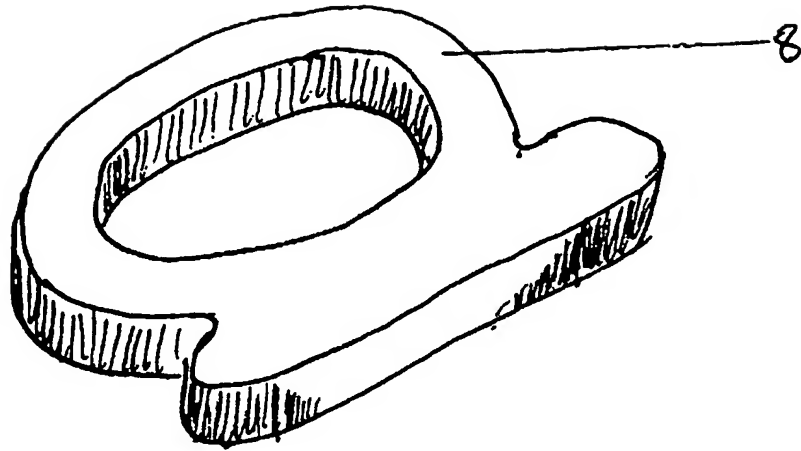
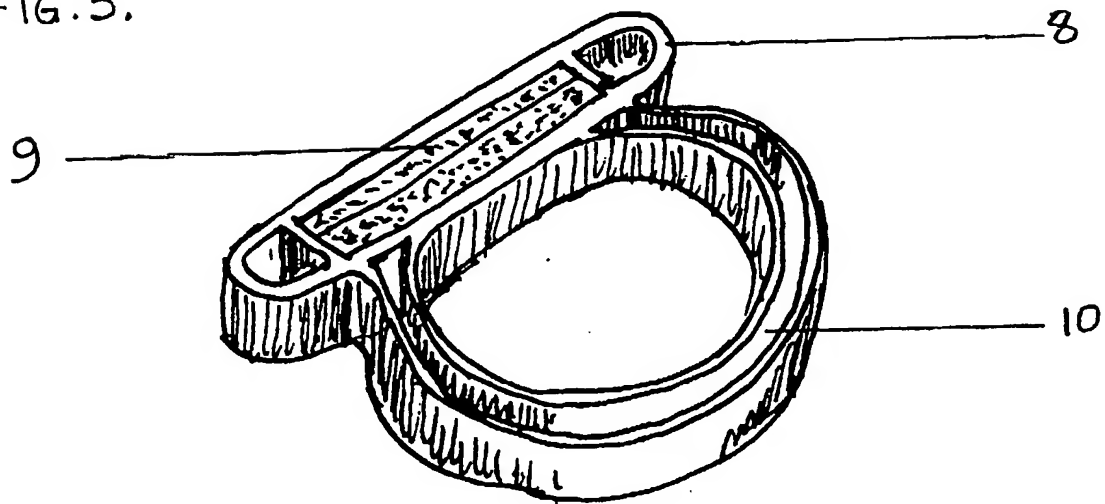


FIG. 5.



MAGNETIC LETTERS THAT WORK

DESCRIPTION

This invention is a new toy, made by changing the construction of either of two well-known existing toys.

Wooden, pullout, letter jigsaws are a well-known toy for pre-school children. Typically, they consist of 26 letter tiles cut out of a wooden sheet, each with a letter printed on the front and with a pullout knob. The letter tiles fit back into the cutout spaces in the wooden sheet to act as a simple jigsaw.

Magnetic plastic letters are also a well-known toy for children. Typically they consist of plastic in the shape of letters with a small magnet or magnets on the back of the letter so that each letter will stick to a fridge or steel plate.

When a wooden pullout letter is pressed against the surface of a magnetophoretic display panel, such as described in patents GB2245868 and US4143472, and commercially available as the Tomy "Megasketcher", Early Learning Centre "Scribbler" Fisher Price "MagnaDoodle", no imprint is obtained. The present invention enables such a print of the pullout letter to be obtained.

When a magnetic plastic letter is pressed against the surface of a magnetophoretic display panel, a small smudge is obtained as the small magnet or magnets of the plastic letter interact with the display panel. The present invention enables a full imprint of the letter to be obtained.

An object of this invention is to enhance a wooden pullout letter jigsaw so that it produces an imprint of the letters when they are pressed on a magnetophoretic display.

Another object of this invention is to enhance a magnetic plastic letter so that when pressed against a magnetophoretic display it produces a full print of the letter, not a small smudge.

Accordingly, this invention applies magnetic backing material to wooden jigsaw letters in the shape of the letter that is to be produced when the tile is pressed on the magnetophoretic display panel.

Accordingly, this invention applies magnetic material in the whole shape of the plastic letter to a magnetic letter, rather than just putting in a small magnet or magnets, which do not fully express the shape of the letter to be imprinted on the magnetophoretic display panel.

A preferred embodiment of the invention will now be described with reference to the accompanying drawings in which:

FIGURE 1 shows the front of a wooden pull out jigsaw puzzle tile;

**FIGURE 2 shows the back of a wooden pull out jigsaw puzzle tile with magnetic strip applied in the shape of the letter;
 FIGURE 3 shows prints on a magnetophoretic display panel;
 FIGURE 4 shows the front of a magnetic letter; and
 FIGURE 5 shows the back of a magnetic letter.**

In Figure 1, the front of a wooden jigsaw letter tile is shown consisting of the wooden body 1, the printed letter shape 2 and the pullout knob 3.

In Figure 2 the back of the wooden jigsaw letter tile is shown consisting of the wooden body 1 with magnetic strip in the shape of the letter 4 stuck into an appropriately shaped recess in the wooden body 1. The recess is not essential but improves durability.

Figure 3 shows that when the back of the letter tile is pressed onto the surface of a magnetophoretic display panel 5, an imprint 6 is obtained.

In Figure 4, the front of a plastic magnetic letter is shown 8. In Figure 5, the back of the letter is shown. In well-known, commonly available magnetic letters, only a small area 9 of the letter contains magnetic material and the effect of pressing the letter on a magnetophoretic display panel is a smudge 7 in Figure 3. In the present invention the magnetic area is extended to fill the area 10 in Figure 5. This results in a properly formed character 6 in Figure 3 on the magnetophoretic display.

An advantage of the present invention is that words containing repeated letters, e.g. "mummy" can be created by repeatedly pressing the letter 'm' on the display panel, rather than for example, having to buy three wooden jigsaws to make the word using multiple "m" letter tiles.

Another advantage of the present invention is that children can draw over the letter prints on the display using a magnetic pen to practice writing letters. The design of the letters can be adapted to make this more exciting- for example by using dotted lines for the child to complete or by leaving a light area in the centre of the lines comprising the letters so that the child can fill these in to complete the letter. An indication can be added to show the child what sequence to complete the strokes.

The present invention is not just restricted to letters. The same principle works for numbers, words and any character or picture. Many colouring-in games and writing and drawing games are enabled by varying the design of the tiles.

CLAIMS

- 1. Pullout jigsaw tiles with an alphanumeric image on the front of each jigsaw tile and magnetic material applied to the lower side of each tile in the shape of the image on the top side so that when the tile is pressed on a magnetophoretic display it causes the image to be produced on the display**
- 2. Magnetic letters in which magnetic material is applied to the lower side of the letter in the shape of the letter so that an image of the letter appears when the tile is pressed on a magnetophoretic display.**
- 3. A letter tile as claimed in Claim 1 or Claim 2 where only part of an alphanumeric image is produced when pressed on the magnetophoretic display so that the user can complete the image using a magnetic drawing pen**
- 4. A toy for producing alphanumeric images, words, or numbers on a magnetophoretic display, substantially as herein described above and illustrated in the accompanying drawings.**
- 5. A toy for producing general images on a magnetophoretic display, substantially as herein described above and illustrated in the accompanying drawings.**



Application No: GB 0216695.7
Claims searched: 1 to 5

Examiner: Matthew Jefferson
Date of search: 6 December 2002

Patents Act 1977 : Search Report under Section 17

Documents considered to be relevant:

Category	Relevant to claims	Identity of document and passage or figure of particular relevance
X	1 to 5	GB 1584521 A (PILOT MAN-NEN HITSU KK) See page 7, lines 40 to 43 and figure 15.
X	1 to 5	US 6416329 B1 (HIROTA ET AL.) See column 5, line 22 to column 6, line 34 and figures 8 and 9.

Categories:

X	Document indicating lack of novelty or inventive step	A	Document indicating technological background and/or state of the art.
Y	Document indicating lack of inventive step if combined with one or more other documents of same category.	P	Document published on or after the declared priority date but before the filing date of this invention.
&	Member of the same patent family	E	Patent document published on or after, but with priority date earlier than, the filing date of this application.

Field of Search:

Search of GB, EP, WO & US patent documents classified in the following areas of the UKC^T:

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Worldwide search of patent documents classified in the following areas of the IPC⁷:

A63H

The following online and other databases have been used in the preparation of this search report:

Online: EPODOC, PAJ, WPI.
